

REMARKS

Claims 1-29 are pending.

Claims 30 and 31 are new.

In the Office Action dated November 27, 2009, claims 1-4, 6, 7, 9-15, and 26-28 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,909,707 (Rotstein) in view of U.S. Patent No. 6,141,335 (Kuwahara); claims 16 and 17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Rotstein in view of Kuwahara, and further in view of U.S. Patent No. 6,330,460 (Wong); claims 5, 8 and 29 were rejected under 35 U.S.C. § 103(a) as unpatentable over Rotstein in view of Kuwahara, and further in view of U.S. Patent No. 6,922,435 (Neufield); claims 18 and 21-24 were rejected under 35 U.S.C. § 103(a) as unpatentable over Rotstein in view of Kuwahara, and further in view of U.S. Patent No. 6,795,424 (Kapoor); claims 19 and 20 were rejected under 35 U.S.C. § 103(a) as unpatentable over Rotstein in view of Kuwahara and Kapoor, and further in view of U.S. Patent No. 6,463,303 (Zhao); and claim 25 was rejected under 35 U.S.C. § 103(a) as unpatentable over Rotstein in view of Kuwahara, and further in view of U.S. Patent Application Publication No. 2003/0022635 (Benning).

Independent claim 1 has been amended to recite that a first spreading code used to generate a signal by a first of the pair of signal generators is offset by the mutual micro-timing offset from a second spreading code used to generate a signal by a second of the pair of signal generators. Support for this amendment can be found at least on page 10, line 12 – page 11, line 9, of the present application. Similar support exists for the amendment of independent claim 26.

Newly added dependent claims 30 and 31 are supported by at least Figs. 2A and 2B and the accompanying text of the present application.

It is respectfully submitted that claim 1 is non-obvious over Rotstein in view of Kuwahara.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine

reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

The Office Action conceded that Rotstein fails to disclose the following element of claim 1:

for each antenna, a respective signal generator to generate a respective signal comprising a common overhead component common to all the signals, using a spreading code common to all signal generators;
common overhead components transmitted on the overlapping beams.

5/6/2009 Office Action at 3. However, the Office Action alleged that Kuwahara discloses the claimed subject matter missing from Rotstein. *Id.*

Specifically, the Office Action cited the following passages of Kuwahara: column 7, lines 6-10, 33-37. *Id.* at 4. The cited passages in column 7 of Kuwahara refer to the example shown in Fig. 8 of Kuwahara where for transmitting a pilot signal, a constant time is provided between beams. However, the rotation of transmission of the pilot signal as depicted in Fig. 8 of Kuwahara is quite different from the subject matter of claim 1, which recites the use of different **spreading codes** that are offset from each other by a mutual micro-timing offset. There is no hint given in Kuwahara of a first spreading code being used to generate a signal by a first of a pair of signal generators (that produce signals in overlapping beams within a coverage area) being offset by the mutual micro-timing offset from a second spreading code used to generate a signal by a second of the pair of signal generators.

Therefore, even if Rotstein and Kuwahara could be hypothetically combined, the hypothetical combination of the references would not have led to the subject matter of claim 1.

Moreover, no reason existed that would have prompted a person of ordinary skill in the art to combine Rotstein and Kuwahara to achieve the claimed invention. In Rotstein, different PN offsets are used to define different adjacent sectors within a cell. In Fig. 3 of Rotstein, four distinct PN offsets (A, B, C, D) are used, with the same PN offset reused in sectors that are spatially separated by 120°. Rotstein, 2:44-49. According to Rotstein, by assigning different PN offsets to neighboring sectors, interference between **distinct** pilot channels in corresponding **distinct** sectors is reduced, which would result in reduced pilot pollution. Rotstein, 1:26-28; 40-43; 2:60-62. Thus, Rotstein is concerned with reducing the problem of **different pilot** channels in different corresponding **sectors** of a cell interfering with each other. Significantly, it

is noted that the teaching in Rotstein of distinct pilot channels in distinct sectors is quite different from what is recited in claim 1, namely that a common overhead component is common to all signals generated by respective signal generators that are transmitted by antennas.

Thus, the teachings of Rotstein are inconsistent with the teachings of Kuwahara. A person of ordinary skill in the art would therefore not have been prompted to combine the teachings of Rotstein and Kuwahara to achieve the claimed subject matter. Moreover, Rotstein would have led a person of ordinary skill in the art to a solution in which distinct pilot channels in distinct sectors are communicated using different PN offsets to avoid pilot channel pollution, which is inconsistent with providing a common overhead component common to all signals, as recited in claim 1.

A person of ordinary skill in the art would have found no reason to combine the teachings of Rotstein of Kuwahara. Therefore, claim 1 is non-obvious over Rotstein and Kuwahara.

Independent claim 26 is similarly non-obvious over Rotstein and Kuwahara.

Dependent claims, including newly added dependent claims 30 and 31, are allowable for at least the same reasons as corresponding independent claims.

In view of the allowability of base claims, it is respectfully submitted that the obviousness rejections of dependent claims over Rotstein, Kuwahara, and other references have been overcome.

In view of the foregoing, allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 14-1315 (15658ROUS02U).

Respectfully submitted,

Date: March 1, 2010

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